UNDERGROUND STORAGE TANK
CLOSURE SUMMARY

RWQCB File No.: **50-2940**		Staff: Beatrice Griffey/Andrew Murphy (EPA)	
Site Name (Building number)/Address: **43336**	Responsible parties: **U.S. Marine Corps**	Address: **AC/S ES, Marine Corps Base Box 555008, Camp Pendleton, CA 92055-5008**	Phone no.: **760.725.9774**

I. CASE INFORMATION

Tank No.	Size in Gallons	Contents	Closed in-place/Removed/Active?	Date
	950	**Diesel Oil**	**Removed**	**08/94**

II. SITE CHARACTERIZATION INFORMATION

GW Basin:	Beneficial uses: **MUN AGR, REC1, REC2, WARM, COLD, WILD, RARE**	Depth to drinking water aquifer:
San Juan Hydrologic Unit **San Onofre Hydrologic Area** **Las Pulgas Subarea**	Is the Site West of I-5: **No**	**Latest information, December 1999: 22.5 feet below ground surface.**
Distance to nearest municipal/base supply well: **Approximately 3.6 miles**		
Distance from ground surface to groundwater: **UNK**	Well screen interval: **NA**	Flow direction: **UNK (typically SW)**
Soil types: **Silty sand, silt.**	Maximum soil depth sampled: **33 feet bgs.**	

Contaminant	Soil (mg/kg)		PRGs*		Water (µg/L)		SPLP Result (µg/L)	CA MCL (µg/L)
	Initial **(1994)**	Latest **(1999)**	Residential (mg/kg)	Industrial (mg/kg)	Initial	Latest		
TPH (Gas)	<1		NA	NA				
TPH (Diesel)	2600	20	NA	NA		<100		
TPH mo			NA	NA				
Benzene		<0.05	0.64	1.4		<0.5	<0.3	1
Toluene		<0.05	520	520		<0.5	<0.3	150
Ethylbenzene		<0.05	400	400		<0.5	<0.3	300
Xylenes		<0.05	270	420		<1.5	<0.6	1750
Methyl tertiary butyl ether (MTBE)		<0.05	32	70		<20	<1.0	3

* PRGs = USEPA Region 9 Preliminary Remedial Goals

III. SITE INSPECTION

Pre-closure site inspection: **1/26/06**	Is there sensitive receptor next to the site (school, church, hospital, kindergarten etc.)? If yes, brief description: **No**

IV. FREE PRODUCT

Was free product encountered? **No**	Has free product been totally recovered? **NA**
When was free product recovery project completed? **NA**	

V. SOIL REMEDIATION

Method: **UST Excavation Only**	Duration of remediation: **NA**
Waste manifest document: **Not Available**	Soil disposal volume: **42.3 cubic yards**

VI. GROUNDWATER REMEDIATION

Method: **NA**	Duration of remediation: **NA**

Site Name/Address: Building 43336	Staff Initial: BG/AM

VII. SUMMARY OF SITE ACTIVITIES AND NARRATIVE JUSTIFICATION FOR RECOMMENDED ACTION

Narrative summary of site description and background, site assessment, and current conditions

Site Background:

The site is situated in Las Pulgas Canyon within the San Onofre - Las Flores Creek Watershed. Groundwater is shallow, at approximately 22.5-feet below ground surface (bgs) (Ninyo and Moore, 2000). Fill and younger alluvium underlie the site. The fill typically extends from the ground surface to 9-feet bgs in the former tank cavity and consists of silty fine to medium sand. The younger alluvium generally consists fine to medium sandy silts.

The UST at site 43336 was installed adjacent to the south side of Building 43336 at an unknown date and was used to supply diesel fuel to the heating system of the building. The UST was constructed of steel, was 9-feet in length and 4.5-feet in diameter, and had a capacity of 950-gallons. The UST system consisted of the tank, a remote gravity-fed fill pipe, and ancillary supply piping. On August 17, 1994 Minority Enterprises, Inc (MEI) removed the tank. MEI removed the product piping and remote fill pipe on August 23rd and December 6th of the same year, respectively. Following UST and pipe removal, MEI personnel collected soil samples from the excavations. Nine samples were taken each of which were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) and diesel fuel (TPH-d). The maximum contaminant concentration encountered was 2,600 mg/Kg TPH-d at 10 feet bgs. There are no records in the RWQCB files that indicate that the tank removal contractor performed contaminated soil removal and clean fill replacement. Nevertheless, the Marine Corps stated in writing to the RWQCB that they have documentation from the removal contractor reporting that 42.3 cubic yards of contaminated soil was removed and replaced with clean course-sand fill. In support of this statement the fill within the tank pit differs from the native Younger Alluvium.

In December of 1999 and January of 2000 five soil borings were drilled and sampled at 2.5-foot intervals. Forty-five samples were taken, one of which was placed adjacent to the location where previously a result of 2,600 mg/Kg TPH-d was obtained. That sample showed <10 mg/Kg TPH-d. Only one sample from all the borings showed a contaminant result at a concentration greater than the analytical detection limit (TPH-d at a concentration of 20 mg/Kg [a duplicate of this sample had a concentration of 36 mg/Kg]) and that was at a depth of 17.5 feet bgs (Boring B-1). The only sample with contamination (the 17.5-foot sample from B-1) was sent to an off-site laboratory for volatiles analyses by EPA Method 8260 and BTEX/MTBE and PAHs by SPLP methodology. Results of the analyses were ND for all analytes. The soil borings were advanced to 20 feet bgs in four of the locations and down to 32.5 feet bgs in one (B-1). Prior to termination of advancement six consecutive ND results were obtained for all analytes investigated.

Groundwater was encountered at 22.5-feet in boring B-1. A sample was collected and submitted to the on-site laboratory. TPH-d, BTEX, and MTBE were not detected above method reporting limits.

Narrative justification for case closure:

1) **Describe how the leak was stopped and the ongoing sources of pollution were removed or remediated to the extent practicable.**
   The UST was removed, and the contaminated soil encountered was removed and replaced with clean fill. No "leak" has been documented for this site.

2) **Provide site characterization information (lateral and vertical extent, estimate of contaminated soil quantity remaining (yd^3), etc.). Attach cross sections with graphical presentation of isoconcentration lines, groundwater elevations, and lithology.**
   There is currently no evidence of any contaminated soil remaining at this site, however, approximately 0.15 cubic yards of contaminated soil is estimated to remain at the site (Ninyo and Moore, 2000).

3) **Describe how groundwater, surface water, or other sensitive receptors are not likely to be impacted by direct contact and contaminant migration (liquid and vapor phase):**
   There is no evidence of contaminated soil currently remaining at the site, which could affect groundwater, surface water, or other sensitive receptors.

4) **Provide supporting information to defend the position that the site presents no significant risk to human health.**
   See 3) above.

5) **Provide supporting information to defend the position that the site presents no significant risk to the environment.**
   See 3) above.

VIII. ELECTRONIC DELIVERALE FORMAT (EDF) SUBMISSION

Have electronic data reporting requirements been met? **Yes**

Site Name/Address: Building 43336	Staff Initial: BG/AM

IX. CLOSURE

Does completed corrective action protect beneficial uses per the RWQCB Basin Plan? **Yes**		
Should corrective action be reviewed if land use changes? **No**		
Monitoring wells decommissioned? **NA**	Number decommissioned: **NA**	Number retained: **NA**
Enforcement actions taken: **None**		
Enforcement actions rescinded: **None**		

NA=Not Applicable
ND=Not Detected above method reporting limits
GW=groundwater
UNK=unknown